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How to evaluate coping strategies for stressful situations? Validation of the CSI in a Spanish university population

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A B S T R A C T

The aim of the present study was to evaluate the psychometric properties of the Coping Strategies Inventory (CSI) in a sample of students from the Complutense University of Madrid (UCM) in the COVID-19 post-pandemic setting. For this, a cross-sectional study was conducted in which 2835 university students (71.1% women and 28.9% men) participated, with an average age of 21.8 years (SD= 2.97). The factorial structure of the scale was assessed using descriptive and confirmatory analyses, and the results confirm that the CSI maintained the structure of eight correlated factors. In addition, the CSI presented adequate levels of reliability that provide evidence for its use among Spanish university students. Taking into account the characteristics of stress in a university population, having instruments validated in higher education regarding students' coping strategies for stressful situations makes it possible to analyze and, therefore, influence the implementation and development of education policies aimed at improving the academic experiences of university students.

¿Cómo evaluar las estrategias de afrontamiento para situaciones estresantes? Validación de la CSI en población universitaria española

Palabras clave:
Estudiantes universitarios
Inventario de estrategias de afrontamiento
Estrategias de afrontamiento
Validación

R E S U M E N

El objetivo del presente estudio fue evaluar las propiedades psicométricas del Inventario de estrategias de afrontamiento (CSI) en una muestra de estudiantes de la Universidad Complutense de Madrid (UCM) en el contexto pospandemia de la COVID-19. Para ello se realizó un estudio transversal en el que participaron 2835 estudiantes universitarios (71,1% mujeres y 28,9% hombres), con una edad media de 21,8 años (DE= 2.97). La estructura factorial de la escala fue evaluada mediante análisis descriptivos y confirmatorios, y los resultados confirman que el CSI mantuvo la estructura de ocho factores correlacionados. Además, el CSI presenta adecuados niveles de fiabilidad que aportan evidencia para su uso entre estudiantes universitarios españoles. Teniendo en cuenta las características propias del estrés en población universitaria, contar con instrumentos validados en la educación superior sobre las estrategias de afrontamiento de los estudiantes ante situaciones estresantes permite analizar y, por ende, incidir en la implementación y desarrollo de políticas educativas encaminadas a mejorar las experiencias académicas de los estudiantes universitarios.

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Introduction

Coping strategies are defined as those behaviors and cognitive skills people use to deal with internal and environmental demands perceived as stressful (Folkman, 1984). Coping always implies cognitive and behavioral efforts oriented to the search for resources to manage the situation perceived as threatening and/or alarming (Lazarus & Folkman, 1984). These resources seek to modify the external or internal environment through actions aimed at solving the problem and/or internal processes to confront the emotions derived from the upsetting situation. Coping is seen as a process, a dynamic, complex and stabilizing construct oriented to promoting a person's adjustment to situational contexts evaluated as stressful (González et al., 2007).

Broadly speaking, stress can be defined as the expression of the imbalance perceived by the person between the demands required in a certain situation and the resources, they have available to deal with it (Ongarato et al., 2009). Lazarus and Folkman (1986) defined stress as the set of relations generated between the personal assessment of a situation or context and the ability to confront it. Stress, therefore, can be conceptualized as a relational process between the person and their environment, in which the person's traits and the nature and demands of the environment must be considered (Lazarus, 2000). This relation can generate emotional, cognitive and behavioral tensions and expressions that affect the perception of personal well-being in a real or perceived situation of danger, from the cognitive assessment that the person makes and from the emotional experiences this situation involves (Selye, 1993).

In this sense, stress carries an adaptive function that seeks to restore the balance in new situations and can be defined as emotional pain, a result of the combination of three elements: environment, negative thoughts and physical responses (McKay et al., 1988). It is relevant that the stressor itself is not the cause of the stress, it is not a cause-effect relationship, but rather it stems from the person's perception about how the situation demands resources and responses they do not have and puts their personal well-being at risk (Sandín, 2003). This threat is perceived on the basis of the cognitive assessment that the person makes, which also considers the emotional element that this situation involves. Therefore, the events in themselves are not stressful, since the same event for different people has different meanings on the basis of its relation to the demands of the environment and/or their internal demands. These meanings produce different responses that lead to diverse thoughts, feelings and emotions (Folkman et al., 1986).

In terms of these responses to stressful situations, Cuatrecasas (2009) indicates that stress is associated with states of subjective malaise, accompanied by emotional changes that generally interfere in the person's social activity, and appear at times of adaptation to significant changes in biographical processes or stressful life events. According to Fernandez-Abascal (1997), coping is preparation for action to avoid the damage of the stressor. It is the combination of efforts, both cognitive and behavioral, developed to manage specific demands, internal or external, which are evaluated as excessive or beyond the person's resources. There are multiple strategies, and not always with beneficial effects for the person; although they are successful in terms of the stressor, they can have an impact on emotional well-being (Londoño et al., 2009).

Coping strategies, therefore, are a key element in the study of psychosocial well-being in a person's relation to stressful situations. The way in which a person confronts stressful situations determines the impact these situations will have on their well-being, health and quality of life (Gustems-Carnicers & Calderón, 2013; Skinner et al., 2003). In this order of ideas, personal well-being may be considered an essential element of the broader construct of quality of life, both personally and socially (Casas, 1996).

It should be pointed out that, in the scope of studying health, education and psychology, the constructs of coping and stress have typically been studied together (Zonta et al., 2006; Viñas et al., 2015), with the increase in studies on the issue linked to different variables like socioemotional well-being or resilience from the COVID-19 public health crisis worth noting (MCFadden et al., 2021; Dorado et al., 2021; Jubin et al., 2022).

Additionally, the increase in studies in the university environment has been considerable (González et al., 2022; Acebedo & Amador, 2021; Váldez et al., 2022) due to the prominence of academic stressors stemming from Covid-19 on university students' mental health. In addition to the above, university studies represent the educational period with the highest levels of stress, and this is directly related to students' academic satisfaction (Martín, 2007; Reddy et al., 2018; Castillo et al., 2020; Silva-Ramos et al., 2020). This is linked to a series of personal, environmental and educational conditioning factors, such as an increased workload and/or psychosocial changes associated with the life cycle in which students find themselves (Beck et al., 2003). University stress has been widely studied (Blázquez et al., 2011; Chraif, 2015; Franzen, et al., 2021), and this is because the analysis of stress in university students has specific characteristics that require research tools that have specific reliability and validity for this group. Despite the above, little research has focused on studying the coping strategies used by students in stressful situations.

As part of the training process, higher education studies aim, in addition to the development of academic skills, at the personal, social and emotional development of students (Matarranz, 2021). To develop the mentioned, it becomes essential to know what strategies they use to cope with stressful situations and, therefore, to be able to implement mechanisms of action aimed at improving their skills and / or abilities to analyze, understand and cope with the meaning of any pre-established problem (Lee & Park, 2019).

Based on the importance of coping strategies in people's well-being, the existing classifications are diverse; therefore, the applicable measuring instruments in social research are numerous. Most of them have already been adapted to the Spanish context. Among them, the CSI is interesting because it incorporates the stressful event, the frequency of use of eight primary coping strategies and the perceived level of self-coping (efficacy).

The original CSI was developed by Tobin et al. (1989) from the Ways of Coping Checklist (Folkman & Lazarus, 1980), a classification created from the problem-focused approach, and therefore on the problem-solving skills used to modify the problem or stressful event. The instrument was comprised of 72 items distributed in sets of 9 for each of the eight primary dimensions (problem solving, cognitive restructuring, social support, emotional expression, problem avoidance, wishful thinking, social withdrawal and self-criticism), and was validated with a sample of 398 people. The eight dimensions or primary scales of the CSI can be grouped into four secondary dimensions (problem engagement, emotion engagement, problem disengagement, and emotion disengagement). The CSI also presents two tertiary scales resulting from the grouping of the secondary ones, engagement and disengagement. Then, the CSI was adapted and validated in Spanish by Cano et al. (2007) in a sample of 337 participants and it obtained a first-order factorial structure consistent with the original study. However, the second- and third-order structures of the original study could not be confirmed (Tobin et al., 1989) in the Spanish population. The result of the adaptation by Cano et al. (2007) produced a reduced version of the original scale (40 items) that offered adequate convergent validity and high levels of consistency.

The psychometric properties of the adaptation to Spanish (Cano et., 2007) have been analyzed and corroborated in several studies (González et al, 2007; Rodríguez-Díaz et al., 2014; Ongarato et al.,

2009; Rubio et al., 2016; Nava et al., 2010), there is no research that evaluates the psychometric properties in the Spanish university population.

Taking both the available evidence and the relevance of the analysis and measurement of coping into consideration as core issues in the explanation and conceptualization of stress processes, such as the inexistence of materials that assess coping strategies in the university population in Spain, the present study posited the following hypothesis (H1): the scores on the CSI will maintain a structure of eight correlated factors and adequate levels of reliability in a sample of university students in Spain. On the basis of these considerations, the aim of the present study was to evaluate the psychometric properties of the CSI in a sample of students at the university population in Spain.

Method

Participants

The participants were selected through nonprobability sampling. The final sample was comprised of 2835 students in Undergraduate, Master, Postgraduate Course and Doctorate programs at the UCM registered in the 2021-2022 academic year. After reviewing the valid responses and, therefore, excluding those participants who had answered the questionnaire incorrectly or incompletely, the final sample was made up of 2803 students (71.1% women and 28.9% men), with an average age of 21.8 (*SD*= 2.97). With respect to the level of studies in which they were registered at the time of the response, 74.7% were Undergraduate students, 12% Master's students, 1.7% in Postgraduate Courses, and 10.5% Doctoral candidates. In relation to the areas of knowledge, 617 students studied in the area of Arts and Humanities, 408 in Sciences, 1056 in Social and Legal Sciences, 614 in Health Sciences and 108 in Engineering.

Instruments

A sociodemographic questionnaire of closed questions was applied: age, sex and level of studies. In addition, the adaptation to Spanish of the Coping Strategies Inventory (CSI) developed by Cano et al. (2007) based on the original study by Tobin et al. (1989) was applied. The CSI is a self-report measure that assesses a person's subjective perception about the use of coping strategies for stressful situations and is made up of 40 items answered on a Likert-type scale (0=not at all, 4=totally). The CSI has a structure of 8 dimensions called: problem solving (5 items, e.g., "I work on solving the problem"), self-criticism (5 items, e.g., "I realized that I was personally responsible for my difficulties and I reproached myself"), emotional expression (5 items, e.g., "I let my feelings out to reduce stress"), wishful thinking (5 items, e.g., "I wished the situation had never begun"), social support (5 items, e.g., "I found someone who listened to my problem"), cognitive restructuring (5 items, e.g., "I went over and over the problem in my mind and in the end I saw things differently"), problem avoidance (5 items, e.g., "I did not let it bother me, I avoided thinking about it too much") and social withdrawal (5 items, e.g., "I spent some time alone"). The Spanish adaptation of the CSI has an alpha value of .80 and has presented evidence of reliability and validity in different Latin American contexts (Ongarato et al., 2009; Nava et al., 2010; Rodríguez et al., 2014; González et al., 2007), not having been used previously in a sample made up of Spanish university students.

Procedure

To conduct the study and administer the instruments, financing and collaboration of the UCM Student Observatory. The study had the approval of the UCM Ethics Committee for Research and Biosafety (Ref: CE_20211118-11 SOC). Informed consents were applied to the students participating in the study. Once the ethical principles of the project, confidentiality and anonymity had been safeguarded, the questionnaire was sent in online format from the UCM Office of the Vice-Rector of Students through institutional e-mail to all the students registered in the 2021-2022 academic year.

Table 1.
Descriptive statistics and factorial loads of the Coping Strategies Inventory

	Mean	Standard Deviation	Skewness	Kurtosis
it1	3.20	1.31	-.09	-1.12
it2	3.33	1.26	-.25	-.95
it3	3.32	1.32	-.24	-1.07
it4	2.84	1.31	.17	-1.06
it5	3.13	1.31	-.06	-1.07
it6	2.05	1.21	.95	-.15
it7	1.91	1.14	1.10	.22
it8	2.07	1.26	.94	-.29
it9	2.05	1.24	.96	-.17
it10	1.67	1.06	1.59	1.70
it11	2.40	1.20	.57	-.60
it12	2.73	1.27	.30	-.94
it13	2.47	1.21	.50	-.64
it14	2.58	1.26	.41	-.84
it15	2.07	1.26	.97	-.20
it16	3.33	1.50	-.28	-1.38
it17	3.42	1.44	-.37	-1.24
it18	3.46	1.46	-.41	-1.23
it19	3.11	1.43	-.08	-1.31
it20	3.02	1.34	.02	-1.15
it21	3.05	1.37	-.02	-1.22
it22	3.52	1.31	-.46	-.93
it23	3.11	1.34	-.09	-1.14
it24	3.09	1.29	-.06	-1.03
it25	3.17	1.39	-.16	-1.21
it26	2.39	1.25	.59	-.67
it27	2.50	1.22	.44	-.78
it28	2.54	1.22	.41	-.79
it29	2.45	1.23	.49	-.71
it30	2.70	1.28	.31	-.95
it31	2.46	1.28	.61	-.67
it32	2.47	1.34	.52	-.93
it33	2.50	1.25	.51	-.72
it34	2.22	1.25	.74	-.52
it35	2.07	1.20	.96	-.03
it36	2.36	1.38	.61	-.92
it37	1.91	1.27	1.23	.29
it38	2.13	1.24	.87	-.33
it39	1.98	1.19	1.05	.07
it40	2.06	1.24	.99	-.10

Analysis

First, descriptive measures of each of the items on the scale were analyzed. Next, the factor structure of the scale was

evaluated, based on methodological criteria, three confirmatory factor models (CFA) were adjusted - one-dimensional (null model), two-dimensional (null model) and with eight correlated factors (theoretical model) - using the MPLUS software version 7.1 (Muthén & Muthén, 2011). For the implementation of the CFA, the polychoric correlation matrix was used, recommended for the modeling of categorical data. For the estimation of the goodness-of-fit indices, the weighted least squares mean, and variance adjusted (WLSMV) method was used. This method made it possible to obtain robust indices, as well as appropriate estimations of the parameters and their level of error (Finney & Di Stefano, 2006; Flora & Curran, 2004). The CFA model was assessed from the following goodness-of-fit indices: WLSMV - $\chi 2$, comparative fit index (CFI), Tucker-Lewis index (TLI) and root mean square error of approximation (RMSEA). For the CFI and TLI, values greater than or equal to .90 are considered a reasonable fit (Schumacker & Lomax, 2016), while for the RMSEA values below .08 are considered a reasonable fit (Browne & Cudeck, 1993). To estimate reliability, the following coefficients were used: McDonald's ω, greatest lower bound (GLB) and Cronbach's α (Green & Yang, 2015; Trizano-Hermosilla et al., 2021).

Results

Descriptive analysis

Table 1 contains descriptive statistics of centralization and dispersion. In relation to the averages, it is observed that item 22 "I spoke with a trusted person" obtained the highest mean (Mean = 3.52, Standard deviation = 1.31) and item 10 "It was my mistake, so I had to suffer the consequences" obtained the lowest mean (Mean= 1.67, Standard deviation = 1.06).

Factorial structure

To evaluate if the structure of 8 correlated factors was reasonable in the Spanish sample, a CFA was performed with the 40 items on the scale. Three alternative CFA models were estimated. The first model, unidimensional, provided an unsatisfactory fit: WLSMV-$\chi 2$ (DF = 740) = 58198.065; p < .001; CFI = .415; TLI = .383; RMSEA = .166 (CI90% = .165 -.168). The second model evaluated considered a two-factor structure, the results of which again gave unsatisfactory goodness-of-fit indices: WLSMV - $\chi 2$ (GL = 739) = 50923.688; p < .001; CFI = .489; TLI = .461; RMSEA = .156 (CI90% = .155 -.157). Finally, the estimation of a model of eight correlated factors revealed an acceptable fit WLSMV - $\chi 2$ (GL = 712) = 5457.322; p < .001; CFI = .936; TLI = .942; RMSEA = .049 (CI90% = .048 - .050). These results show that the model fits well to the data, thus confirming the structure of eight correlated factors (Table 2).

Evidence of Reliability

Table 3 provides the evidence of reliability for the scale considering the model of eight correlated factors. The results indicate an acceptable reliability for each factor. The factors AUC and REP presented the highest reliability values for the scale.

Discussion and conclusions

The results obtained from the factor analyses corroborate the original eight-dimension model (problem solving, cognitive restructuring, social support, emotional expression, problem avoidance, wishful thinking, social withdrawal and self-criticism) of the CSI. The internal consistency indicators obtained for the eight dimensions on the Inventory in a sample of Spanish university students were satisfactory, and are similar to those obtained on the Spanish adaptation of the CSI (Cano et al., 2007) based on the original study by Tobin et al. (1989) and that, later, was adapted to different Latin American contexts (Ongarato et al., 2009; Nava et al., 2010; Rodríguez et al., 2014; González et al., 2017). The reliability of the instrument for the eight dimensions that comprise it is satisfactory and, therefore, the CSI can be used with confidence for the study of the coping strategies used by university students in Spain.

Table 2.
Factorial structure of the Coping Strategies Inventory

	Estimate	Standard error	Est./E.est.
it1	.788	.009	92.267**
it2	.870	.007	132.354**
it3	.859	.007	121.758**
it4	.758	.010	78.210**
it5	.798	.009	91.934**
it6	.796	.009	87.079**
it7	.839	.008	106.435**
it8	.921	.005	172.708**
it9	.886	.007	129.724**
it10	.763	.012	65.701**
it11	.719	.011	67.092**
it12	.791	.008	94.182**
it13	.830	.008	105.068**
it14	.848	.007	116.690**
it15	.723	.013	55.712**
it16	.778	.010	81.817**
it17	.873	.007	124.432**
it18	.847	.008	110.928**
it19	.814	.009	92.604**
it20	.732	.012	62.029**
it21	.612	.013	47.134**
it22	.822	.009	91.933**
it23	.794	.009	91.885**
it24	.773	.009	85.718**
it25	.799	.009	87.548**
it26	.699	.012	59.928**
it27	.759	.010	77.357**
it28	.798	.009	86.871**
it29	.761	.010	77.964**
it30	.656	.012	53.541**
it31	.385	.020	19.250**
it32	.694	.014	50.465**
it33	.735	.013	55.849**
it34	.634	.015	43.296**
it35	.720	.014	50.978**
it36	.744	.012	62.226**
it37	.791	.011	70.272**
it38	.795	.009	87.659**
it39	.787	.010	80.406**
it40	.855	.008	104.297**

Note: ** = $p < .001$.

The eight coping strategies on the CSI are consolidated and have been validated by different measuring instruments like the Coping Orientation to Problems Experienced -COPE- (López & Rodríguez, 1997) or the Ways of Coping -WOC- (Folkman et al., 1986) and they are, therefore, strategies with a broad empirical foundation that can

be used to create attitudinal profiles in stressful situations (Jauregui et al., 2016). Despite the evidence of the existence of high levels of stress at every stage of education (Pascoe et al., 2020), the highest levels are associated with university population (Dyson & Renk, 2006). This may be due to the increase in work load (Valdivieso et al., 2020), the lack of social and personal skills to deal with the high levels of demand, the change in life cycle associated with university life, the lack of a stable social support network and/or difficulties confronting future work with hope (Boujut & Bruchon-Schweitzer, 2009). The strategies used by any individual to deal with events with a certain stress load are pivotal in the possible physical and psychological consequences that can result (Stallman, 2020).

Table 3.
Evidence of reliability

Factors	McDonald's ω	Cronbach's α	Greatest lower bound (GLB)
Problem solving	.882	.880	.906
Self-criticism	.886	.884	.897
Emotional expression	.847	.840	.853
Wishful thinking	.865	.861	.877
Social support	.837	.835	.877
Cognitive restructuring	.817	.815	.850
Problem avoidance	.719	.714	.712
Social withdrawal	.834	.832	.874

Beyond the characteristics of higher education and the psychosocial repercussions that can impact students, changes in the teaching-learning model imposed during the pandemic and the constant migration of education towards an increasingly virtualized setting have meant new challenges for students that have resulted in an increase in the levels of emotional distress and stress (Browning, 2021). This supports the idea that any stressful process may involve a traumatic event based on how it is dealt with by the person who suffers it (Cherry & Wilcox, 2020), which is why it is obviously relevant to have mechanisms that aid in assessing the coping strategies present among university students. A tool to:

1. Know students' coping strategies to stressful situations.
2. Implement education policies aimed at improving the use of coping strategies that reduce the impact of stress.
3. Establish attitudinal profiles of the university population to any process and/or change in the teaching-learning model.

Recent studies have highlighted that university men use individual coping strategies more than university women, who tend to use resources more related to the search for support (Freire et al., 2020). In addition, the use of coping strategies considered "unhealthy" like spending more time alone (social withdrawal) has been related to a greater likelihood of experiencing clinical symptoms of depression and anxiety (Stallman et al., 2022).

Studies conducted in Spain on university students during the Covid-19 pandemic have underscored the inverse relation between the use of cognitive restructuring and the fear of Covid-19 (Morales-Rodriguez, 2019). The importance of the use of coping strategies to successfully overcome stressful experiences has been repeatedly endorsed by studies and research linked mainly to primary and secondary education (Valero et al., 2020). Internationally, the use of cognitive restructuring has been linked to a lower rate of mental health issues in the population over 18 years of age (Guo et al., 2020).

With respect to the profiles of psychological well-being and coping strategies among university students, the study by Freire et al. (2016) in Spain has demonstrated that the higher the degree of psychological well-being reported by the students, the greater the use of positive coping strategies. This is in the same line as various studies that relate psychological well-being and the use of coping strategies (Muyan & Demir, 2020). These findings are added to the increasing line of research that directly relates the ability for adaptive coping to stress to resilience (Ye et al., 2020), social support (Fernández-González et al., 2015) and self-fulfillment (Miquelón & Vallerand, 2008).

The pursuit of students' subjective well-being must serve as the cornerstone of national and international university policies; the education community must consider the stressful situations university students face and, in addition, the strategies they have to confront them. The construction of a teaching-learning model that promotes the creation of fairer, more constructive and egalitarian societies must (without fail) stimulate the creation of spaces where students can develop positive coping strategies in a social, economic and cultural model that is going to continue placing them in stressful and frustrating situations. Indeed, the main contribution of the present study is in this vein: to contribute to the corpus of validated scientific material in Spanish for the analysis of coping strategies used by the university population.

As future lines of enquiry, it is necessary to broaden the sample space to university students at different Spanish universities and, also, to students who attend university online. In addition, once the CSI has been validated for university students in Spain, in future studies it would be interesting to contemplate the possible relation between the aforementioned strategies and social, personal, occupational, economic and/or educational variables.

Finally, the present study is not without limitations that will have to be addressed in future studies. First, despite the significant sample size, all the participating students are at the Complutense University of Madrid, which is why, as previously indicated, it is necessary to conduct studies at more Spanish universities. Moreover, in the present study, the use of personal, social and/or psychological variables was not included, which could have provided relevant data on the attitudinal profile of the target population in stressful situations.

Despite these limitations, it is hoped that the present study will be the starting point for new research that will discover the coping strategies in the Spanish university population. Having validated instruments to assess students' coping strategies in stressful situations will make it possible to know and therefore be able to undertake education policies aimed at improving the academic experiences of university students.

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References

Acebedo, K. & Amador, D. (2021). Estrés, estrategias de afrontamiento y experiencia académica en estudiantes universitarios en tiempos de pandemia del COVID-19. La experiencia de Nicaragua y Chile. *Revista Torreón Universitario 10*(27). https://doi.org/10.5377/torreon.v10i27.10839

Beck, R., Taylor, C. & Robbins, M. (2003). Missing home: Sociotropy and autonomy and their relationship to psychological distress and

homesickness in college freshmen. *Anxiety, stress, and coping, 16*(2), 155-166. https://doi.org/10.1080/10615806.2003.10382970
Blázquez, B. O., Sarto, S. B. & del Hoyo, Y. L. (2011). Estrés y otros factores psicológicos asociados en estudiantes de fisioterapia. *Fisioterapia, 33*(1), 19-24.
Boujut, E. & Bouchon, M. (2009). A construction and validation of a freshman stress questionnaire: an exploratory study. *Phychological Reports, 104*(2), 680- 692. https://doi.org/10.2466/pr0.104.2.680-692
Browne, M., & Cudeck, R. (1993). *Alternative ways of assessing model fit in Testing Structural Equation Models.* Sage
Browning, M. H., Larson, L. R., Sharaievska, I., Rigolon, A., McAnirlin, O., Mullenbach, L., ... & Alvarez, H. O. (2021). Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PloS one, 17*(8). https://doi.org/10.1371/journal.pone.0245327
Cano García, F. J., Rodríguez Franco, L. & García Martínez, J. (2007). Adaptación española del Inventario de Estrategias de Afrontamiento. *Actas Españolas de Psiquiatría, 35*(1), 29-39. http://hdl.handle.net/11441/56854
Casas, F., Tiliouine, H., & Figuer, C. (2013). The Subjective Well-being of Adolescents from Two Different Cultures: Applying Three Versions of the PWI in Algeria and Spain. *Social Indicators Research, online first.* https://doi.org/10.1007/s11205-012-0229-z
Castillo-Navarrete, J. L., Guzmán-Castillo, A., Bustos, C., Zavala, W. & Vicente, B. (2020). Propiedades psicométricas del inventario SISCO-II de estrés académico. *Revista Iberoamericana de Diagnóstico y Evaluación-e Avaliação Psicológica, 3*(56), 101-116. https://doi.org/:10.21865/RIDEP56.3.08
Chraif, M. (2015). Correlative study between academic satisfaction, workload and level of academic stress at 3rd grade students at psychology. *Procedia-Social and Behavioral Sciences, 203*, 419-424. https://doi.org/10.1016/j.sbspro.2015.08.317
Cherry, M. L. & Wilcox, M. M. (2020). Decreasing perceived and academic stress through emotion regulation and nonjudging with trauma-exposed college students. *International Journal of Stress Management, 27*(2), 101. https://doi.org/10.1037/str0000138
Cuatrecasas, G. Estrés y dolor crónico: una perspectiva endocrinológica (2009). *Reumatol Clin. 5*(S2), 12-14.
Dorado, A., Pérez Viejo, J., Brea, J. & López, J. (2022). Impact of social and personal factors on psychological distress in the Spanish population in the crisis Covid-19. *The British Journal of Social Work.* https://doi.org/10.1093/bjsw/bcac167
Dyson R. & Renk K. (2006). Freshmen adaptation to university life: depressive symptoms, stress, and coping. *J Clin Psychol, 62*(10),1231-1244. https://doi.org/10.1002/jclp.20295
Fernández Abascal EG (1997). Estilos y estrategias de afrontamiento. En EG Fernández Abascal, F. Palmero, M Chóliz y F Martínez, Cuaderno de Prácticas de Motivación y Emoción, 189-206. Pirámide. https://www.researchgate.net/publication/237036358_Estrategias_de_afrontamiento_del_estres_y_estilos_de_conducta_interpersonal
Fernández -González, L., González- Hernández, A. & Trianes-Torres, M. V. (2015). Relationships between academic stress, social support, optimism-pessimism, and self-esteem in college students. *Electronic Journal of Research in Educational Psychology, 13*(1), 111–130. https://doi.org/10.14204/ejrep.35.14053
Finney, S., & Di Stefano, C. (2006). Non normal and categorical data in structural equation models. In G. Hancock & R. Mueller (Eds.), *A second course in structural equation modeling* (pp. 269–314). Information Age.
Flora, D. B., & Curran, P. J. (2004). An Empirical Evaluation of Alternative Methods of Estimation for Confirmatory Factor Analysis with Ordinal Data. *Psychological Methods, 9*(4), 466–491. https://doi.org/10.1037/1082-989X.9.4.466
Folkman, S. (1984). Control personal y estrés y procesos de afrontamiento: Un análisis teórico. *Revista de Personalidad y Psicología Social, 46*(4), 839-852. https://doi.org/0.1037/0022-3514.46.4.839
Folkman, S.; Lazarus, R.S.; Gruen, R.J. y DeLongis, A. (1986). Appraisal, Coping, Health Status, and Psychological Symptoms. *Journal of Personality and Social Psychology, 50,* 571-579.
Franzen, J., Jermann, F., Ghisletta, P., Rudaz, S., Bondolfi, G. & Tran, N. T. (2021). Psychological distress and well-being among students of health disciplines: The importance of academic satisfaction. *International journal of environmental research and public health, 18*(4), 2151. https://doi.org/10.3390/ ijerph18042151
Freire, C., Ferradás, M. D. M., Valle, A., Núñez, J. C. & Vallejo, G. (2016). Profiles of psychological well-being and coping strategies among university students. *Frontiers in psychology, 7,* 1554. https://doi.org/10.3389/fpsyg.2016.01554
Freire, C., Ferradás, M. D. M., Regueiro, B., Rodríguez, S., Valle, A. & Núñez, J. (2020). Coping strategies and self-efficacy in university students: A person-centered approach. *Frontiers in psychology, 11,* 841. https://doi.org/10.3389/fpsyg.2020.00841
González, D., Dorado, A., Mercado, E. Calleja, J.P. and Gálvez-Nieto, J.L. (2022). Psychometric Examination of the Freshman Stress Questionnaire Using a Sample of Social Work Students in Spain during the Covid-19 Pandemic. *The British Journal of Social Work, 00, 1-18.* https://doi.org/10.1093/bjsw/bcac074
González, Y., Ortega, E., Castillo de Lemos, R., Whetsell, M. & Clehorn, D. (2007). Validación de la Escala Inventario de Estrategias de Afrontamiento, Versión Española de Cano, Rodríguez, García (2007), en el contexto de Panamá. *Enfoque, Revista Científica de Enfermería, 21* (17), 109-133. https://doi.org/10.48204/j.enfoque.v21n17a7
Guo, J., Feng, X. L., Wang, X. H., & van IJzendoorn, M. H. (2020). Coping with COVID-19: exposure to COVID-19 and negative impact on livelihood predict elevated mental health problems in Chinese adults. *International journal of environmental research and public health, 17*(11), 3857. https://doi.otg/10.3390/ijerph17113857
Gustems-Carnicer, J.G. & Calderón, C. (2013). Estrategias de afrontamiento y bienestar adicional importante. *Revista Europea de Psicología de la Educación, 28* (4), 1127-1140, https://doi.org/10.1016/j.cpr.2006.11.003
Jauregui, P., Herrero-Fernández, D. & Estévez, A. (2016). Factorial structure of the Coping Strategies Inventory and its relationship with emotion regulation, anxiety and depression. *Behavioral Psychology, 24*(2), 319–340. https://doi.org/10.30552/ejhr.v6i2.218
Jubin, J., Delmas, P.; Gilles, I., Oulevey Bachmann, A. & Ortoleva Bucher, C. (2022). Protective Factors and Coping Styles Associated with Quality of Life during the COVID-19 Pandemic: A Comparison of Hospital or Care Institution and Private Practice Nurses. *Int. J. Environ. Res.Public Health* 19, 7112. https://doi.org/10.339.0/ijerph19127112
Lazarus, R. (2000). Estrés y emoción. *Manejo e implicaciones en nuestra salud.* Desclée de Brouwer.
Lazarus, R., & Folkman, S. (1984). *Stress, appraisal and coping.* Springer.
Lazarus, R., & Folkman, S. (1986): *Estrés y procesos cognitivos.* Ediciones Martínez Roca.
Lee, J. L. & Park, S. J. (2019). Influencing factors on college adjustment of nursing students: The meaning of life, empathy skills, resilience. *Journal of the Korea Academia-Industrial cooperation Society, 20*(11), 66-75. DOI:10.5762/KAIS.2019.20.11.66
Londoño, N., Pérez, M., & Murillo, M. (2009). Validación de la escala de estilos y estrategias de afrontamiento al estrés en una muestra colombiana. *Informes Psicológicos 11* (13), 13-29. https://revistas.upb.edu.co/index.php/informespsicologicos/article/view/1269
López, M. C., & Rodríguez, J. A. C. (1997). La evaluación del afrontamiento: adaptación española del cuestionario COPE con una muestra de estudiantes universitarios. *Análisis y Modificación de conducta, 23*(92), 797-830.
Martín, I. (2007). Estrés académico en estudiantes universitarios. *Apuntes de Psicología, 25* (1), 87-99.
Matarranz, M. (2021). El Espacio Europeo de Educación Superior y su sello de calidad. *Revista española de educación comparada.* https://doi.org/10.5944/reec.37.2021.27728
McFadden, P., Ross, J., Moriarty, J., Mallett, J., Schroder, H., Ravalier, J., Manthorpe, J., Currie, D., Harron, J. & Gillen, P. (2021). The Role of Coping in the Wellbeing and Work-Related Quality of Life of UK Health and Social Care Workers during COVID-19. *Int. J. Environ. Res.Public Health, 18,* 815. https://doi.org/10.3390/ijerph18020815
McKay, M, Davis, M., & Fanning, O. (1998). *Técnicas cognitivas para el tratamiento del estrés.* Martínez Roca.
Miquelon, P., & Vallerand, R. J. (2008). Goal motives, well-being, and physical health: An integrative model. *Canadian Psychology/Psychologie canadienne, 49*(3), 241-249. https://doi.org/10.1037/a0012759
Morales-Rodríguez, F. M. (2021). Fear, stress, resilience and coping strategies during COVID-19 in Spanish university students. *Sustainability, 13*(11), 5824. https://doi.org/10.3390/su13115824
Muthén, L. & Muthén, B. (2011). *Mplus User's Guide* (6th Ed.). Muthén & Muthén.
Muyan, M., & Demir, A. (2020). A pathway towards subjective well-being for Turkish university students: The roles of dispositional hope, cognitive flexibility, and coping strategies. *Journal of Happiness Studies, 21*(6), 1945-1963. https://doi.org/10.1007/s10902-019-00162-2
Nava, C., Méndez, P. O., Valero, C. Z. V., & Trujano, R. S. (2010). Inventario de Estrategias de Afrontamiento: una replicación. *Psicología y salud, 20*(2), 213-220. https://doi.org/10.25009/pys.v20i2.604
Ongarato, P., de la Iglesia, G., Stover, J. B. & Fernández Liporace, M. (2009). Adaptación de un inventario de estrategias de afrontamiento para adolescentes y adultos: an adaptation to adolescent and adult population. *Anuario de investigaciones, 16,* 383-391. https://www.redalyc.org/articulo.oa?id=369139945036
Pascoe, M., Hetrick, M. & Parker, A. (2020) The impact of stress on students in secondary school and higher education, International Journal of Adolescence and Youth, 25:1, 104-112. https://doi.org/10.1080/02673843.2019.1596823
Reddy, K. J., Menon, K. R. & Thattil, A. (2018). Academic stress and its sources among university students. *Biomedical and pharmacology journal, 11*(1), 531-537. https://doi.org/10.13005/bpj/1404
Rodríguez-Díaz, F. J., Estrada-Pineda, C., Rodríguez-Franco, L. & Bringas-Molleda, C. (2014). Adaptación del inventario de estrategias de

afrontamiento (CSI) a la población penitenciaria de México. *Psicología: Reflexão e Crítica, 27,* 415-423. https://doi.org/10.1590/1678-7153.201427301

Rubio, L., Dumitrache, C., Cordón-Pozo. &Herrera, R. (2016). Propiedades psicométricas de la versión española del Coping Strategies Inventory (CSI) en personas mayores. *Anales de Psicología 32*(2), 355-365. https://doi.org/10.6018/analesps.32.2.216141

Sandín, B. (2003). El estrés: un análisis basado en el papel de los factores sociales. *Revista Internacional de Psicología, 3*(1), 141-157

Schumacker, R. E. & Lomax, R. G. (2016). *A beginner's guide to structural equation modeling.* Routledge.

Selye, H. (1993). History of the Stress Concept. En L. Goldberger & S. Breznitz (Eds.), *Handbook of Stress. Theoretical and Clinical Aspects,* 7-17. The Free Press.

Silva-Ramos, M. F., López-Cocotle, J. J. & Meza-Zamora, M. E. C. (2020). Estrés académico en estudiantes universitarios. *Investigación y Ciencia, 28*(79), 75-83.

Skinner, E. A, Edge, K., Altman, J. & Sherwood, H. (2003). Buscando la estructura de afrontamiento: una revisión y crítica de los sistemas de categorías para clasificar las formas de afrontamiento. *Boletín Psicológico, 129*(2), 216-269. https://doi.org/10.1037/0033-2909.129.2.216

Stallman, H. M. (2020). Health theory of coping. *Australian Psychologist, 55*(4), 295-306. https://doi.org/10.1111/ap.12465

Stallman, H. M., Lipson, S. K., Zhou, S. & Eisenberg, D. (2022). How do university students cope? An exploration of the health theory of coping in a US sample. *Journal of American college health, 70*(4), 1179-1185. https://doi.org/10.1080/07448481.2020.1789149

Tobin, D. L., Holroyd, K. A., Reynolds, R. V., & Wigal, J. K. (1989). The hierarchical factor structure of the Coping Strategies Inventory. *Cognitive therapy and research, 13*(4), 343-361. https://doi.org/10.1007/BF01173478

Trizano-Hermosilla, I., Gálvez-Nieto, J. L., Alvarado, J.M., Saiz, J. L. & Salvo-Garrido, S. (2021). Reliability Estimation in Multidimensional Scales: Comparing the Bias of Six Estimators in Measures with a Bifactor Structure. *Front. Psychol.* https://doi.org/10.3389/fpsyg.2021.508287

Váldez, Y., Marentes, R, Correa, S., Hernández; R. Enríquez, I. & Quintan, M.O. (2022). Nivel de estrés y estrategias de afrontamiento utilizadas por estudiantes de la licenciatura de Enfermería. *Enfermería Global 65,* 248-259. https://doi.org/10.6018/eglobal.441711

Valdivieso-León, L., Lucas Mangas, S., Tous-Pallarés, J. & Espinoza-Díaz, I. M. (2020). Coping strategies for academic stress in undergraduate students: Early Childhood and Primary Education. *Educación XX1, 23*(2), 165-186. https://doi.org/10.5944/educXX1.25651

Valero, N., Vélez, M., Durán, A., & Portillo, M. (2020). COVID-19 coping stress, fear, anxiety, and depression. *Enferm Inv, 5*, 63-70. https://doi.org/10.31243/ei.uta.v5i3.913.2020

Viñas, F., González, M., García, Y. Malo, S. & Casas, F. (2015). Los estilos y estrategias de afrontamiento y su relación con el bienestar personal en una muestra de adolescentes. *Anales de psicología, 31*(1), 226-233. https://doi.org/10.6018/analesps.31.1.163681

Ye, Z., Yang, X., Zeng, C., Wang, Y., Shen, Z., Li, X. & Lin, D. (2020). Resilience, social support, and coping as mediators between COVID-19-related stressful experiences and acute stress disorder among college students in China. *Applied Psychology: Health and Well-Being,* 12(4), 1074-1094. https://doi.org/10.1111/aphw.12211

Zonta, R., Couto Robles, A.C. & Grosseman, S. (2006). Estratégias de enfrentamento do estresse desenvolvidas por estudantes de Medicina da Universidade Federal de Santa Catarina. *Revista Brasileira de Educação Médica, 3*0(3), 147-153. https://doi.org/10.1590/S0100-55022006000300005